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10/811,044	03/27/2004	John J. Williams JR.	42027	9536

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EXAMINER
HICKS, MICHAEL J

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/811,044	WILLIAMS ET AL.
	Examiner	**Art Unit**	
	Michael J. Hicks	2165	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>14 May 2007</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-26</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-26</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>27 March 2004</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All· b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)·
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 08-06)   Office Action Summary   Part of Paper No./Mail Date 20070718

DETAILED ACTION

1.   Claims 1-26 Pending.

Response to Arguments

2.   Applicant's arguments filed 5/14/2007 have been fully considered but they are

not persuasive.

        As per Applicants arguments directed towards Claim 1, Examiner agrees that

Amiri fails to disclose at least one of said communication grants including aid protected

data, but notes that the disclosure of Yun is relied upon to teach this limitation, not the

disclosure Amiri. Examiner notes that both Amiri and Yun describe locking mechanisms

and that although Yun is dealing with resource locking between processes while Amiri

deals with resource locking in a shared storage environment, the behavior of the locking

mechanism is the focus of what the Examiner is relying upon. Fundamentally, the

locking mechanisms in place to control access to resources by processes and those in

place to control access to resources in a network storage environment are the same

and as such, Examiner feels that the two references qualify as analogous art.

        Examiner respectfully disagrees with Applicants assessment that the

combination of Amiri and Yun would not work as Yun accesses data from native

storage. Note that the cited sections of Yun do not rely on the data being accessed

from native storage, but rather, that the locking mechanism would be indifferent as to

where the data originated from. As the native storage data access it is not an integral

part of the disclosure of Yun, Examiner is not compelled to agree that Yun teaches

away from the disclosure of Amiri.

As per Applicants arguments directed towards Claim 2, Examiner feels that the

action sufficiently demonstrated a situation arising in Amiri in which a communicated

grant would not include the protected data (e.g. in the case of the first communicated

grant). Examiner maintains the argument that Amiri demonstrates that the first

communicated grant would not include protected data for the reasons given in the

rejection.

As per Applicants arguments directed towards Claim 3, Applicant states that the

rejection failed to include an indication of protected data and the protected data itself, as

they are two separate limitations. Examiner notes that the citation used in the rejection

clearly indicated that the message included diffs and write notices. As examiner pointed

out in the previous action, diffs are equated to the protected data and the write notices

are equated to the indication of the protected data, it can be seen that both limitations

are addressed by the rejection.

As per Applicants arguments directed towards Claim 4, Examiner notes that the

fact that the whole page is transferred in base HLRC (the portion of the cited text that

Applicant seems to take issue with) was not intended to give the citation any more

relevance, but was merely included to make the cited sentence complete. Note that the

relevance of the cited text lies in the fact that it states that the diffs (e.g. protected data) are transferred for the purposes of page updates. In this case, as only the diffs are being transferred, some indication of the next requestor *must* be included in the transfer messages. Note that if this were note included then the protected data would not be able to be transferred, as it would have no transfer destination. As this is the case, this indication of the next requestor will also act as the indication as to whether or not the lock manager is the next requestor.

As per Applicants arguments directed towards Claim 5, Examiner notes that a requestor would not accept a lock on data which it did not request. As such, the lock request acts as an indication as to whether the protected data will be accepted (e.g. it will be accepted if the protected data includes the requested data).

As per Applicants arguments directed towards Claims 6 and 7, Examiner notes that as only the diffs are being transferred, some indication of the next requestor *must* be included in the transfer messages. Note that if this were note included then the protected data would not be able to be transferred, as it would have no transfer destination. As this is the case, this indication of the next requestor will also act as an indication as to whether or not the lock manager is the next requestor. Furthermore see Examiner comments directed towards Claim 1 above.

Applicants arguments directed towards Claims 8-26 where substantially the same as those indicated above, and thus are considered to be addressed therein.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1-26 rejected under 35 U.S.C. 103(a) as being unpatentable over Amiri in view of Yun.

As per Claim 1, Amiri discloses an apparatus for protecting data using locks (i.e. *"Under this scheme, a centralized lock server provides locking on low-level storage block ranges."* The preceding text excerpt clearly indicates that data is protected using locks.) (Page 6, Column 1, Paragraph 3), the apparatus comprising: a lock manager configured to control access via a lock to protected data maintained in native storage independent of the lock manager (i.e. *"Under this scheme, a centralized lock server provides locking on low-level storage block ranges. A BST executing at a host acquires an exclusive (for a **devwrite**) or a shared (for a **devread**) lock on a set of target ranges by sending a single lock message to the lock server."* The preceding text excerpt clearly indicates that the lock manager (e.g. lock server) controls access to data in native storage at local hosts.) (Page 6, Column 1, Paragraph 3), wherein the lock manager does not access said protected data from said native storage (i.e. *"Under this scheme, a centralized lock server provides locking on low-level storage block ranges. A BST executing at a host acquires an exclusive (for a **devwrite**) or a*

*shared (for a **devread**) lock on a set of target ranges by sending a single lock message to the lock server. The lock server queues a hosts request if there is an existing lock on any part of the requested range."* The preceding text excerpt clearly indicates that the lock manager does not access the protected data on a lock grant, but merely acknowledges and either grants or queues the request.) (Page 6, Column 1, Paragraph 3); and a plurality of requesters ((i.e. *"Under this scheme, a centralized lock server provides locking on low-level storage block ranges. A BST executing at a host acquires an exclusive (for a **devwrite**) or a shared (for a **devread**) lock on a set of target ranges by sending a single lock message to the lock server. The lock server queues a hosts request if there is an existing lock on any part of the requested range."* The preceding text excerpt clearly indicates that a plurality of requestors (e.g. a BST executing at a host) exists.) (Page 6, Column 1, Paragraph 3); wherein the lock manager is configured to receive lock requests for the lock from each of the plurality of requesters (i.e. *" Under this scheme, a centralized lock server provides locking on low-level storage block ranges. A BST executing at a host acquires an exclusive (for a **devwrite**) or a shared (for a **devread**) lock on a set of target ranges by sending a single lock message to the lock server. The lock server queues a hosts request if there is an existing lock on any part of the requested range."* The preceding text excerpt clearly indicates that the lock manager/server recives a plurality of lock requests from the plurality of requestors.) (Page 6, Column 1, Paragraph 3), and to selectively grant said lock requests which includes communicating grants from the lock manager to the plurality of requesters (i.e. *" Under this scheme, a centralized lock server provides locking on low-level storage block ranges. A BST executing at a host acquires an exclusive (for a **devwrite**) or a shared (for a **devread**) lock on a set of target ranges by sending a single lock message to the lock server. The lock server queues a hosts request if there is an existing lock on any part of the requested range. Once conflicting locks have been released, the server grants the request."* The preceding text excerpt clearly indicates that locks are selectively granted based on availability and lock grant messages are sent to the requestors.) (Page 6, Column 1, Paragraph 3).

Amiri fails to disclose at least one of said communicated grants includes said

protected data.

Yun discloses at least one of said communicated grants includes said protected

data (i.e. *"Diffs of selected pages are sent with write notices as a lock grant message."* The preceding

text excerpt clearly indicates that the protected data (e.g. diffs) are included with the lock grant message.)

(Page 529, Paragraph 3).

It would have been obvious to one skilled in the art at the time of Applicants

invention to modify the teachings of Amiri with the teachings of Yun to include at least

one of said communicated grants includes said protected data with the motivation of

reducing the average waiting time and amount of massages in locking systems (Yun,

Abstract).

As per Claim 2, Amiri discloses at least one of said communicated grants does

not include said protected data (i.e. *"The lock server queues a hosts request if there is an existing*

lock on any part of the requested range. Once conflicting locks have been released, the server grants the

request." The preceding text excerpt clearly indicates that locks are selectively granted based on

availability and lock grant messages are sent to the requestors. Note as the lock server does not have

access to the local files, the first communicated grant for a specific range of protected data would not

include the protected data due to the lock manager/server not being able to access it.) (Page 6, Column

1, Paragraph 3).

As per Claim 3, Amiri fails to disclose each of said communicated grants includes

an indication of whether or not said protected data is being communicated therewith.

Yun discloses each of said communicated grants includes an indication of whether or not said protected data is being communicated therewith (i.e. *"Diffs of selected pages are sent with write notices as a lock grant message."* The preceding text excerpt clearly indicates the grant message that includes the protected data also includes write notices (e.g. indication of the protected data/diffs).) (Page 529, Paragraph 3).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Amiri with the teachings of Yun to include each of said communicated grants includes an indication of whether or not said protected data is being communicated therewith with the motivation of reducing the average waiting time and amount of massages in locking systems (Yun, Abstract).

As per Claim 4, Amiri fails to disclose each of said communicated grants includes an indication of whether or not said protected data is requested to be sent to the lock manager with a corresponding release of the lock.

Yun discloses each of said communicated grants includes an indication of whether or not said protected data is requested to be sent to the lock manager with a corresponding release of the lock (i.e. *"To make a page up-to-date only diffs are transferred while the whole page is transferred in base HLRC."* The preceding text excerpt along with Figure 2 clearly indicates that if no other processes are requesting the lock, that the protected data is written back to storage, rather than being forwarded to a next acquiring process. In order to make this determination and perform this operation, an indication of whether or not to forward the protected data must be included in the grant message.) (Figure 2; Page 530, Column 1, Paragraph 1).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Amiri with the teachings of Yun to include an

indication of whether or not said protected data is requested to be sent to the lock

manager with a corresponding release of the lock with the motivation of reducing the

average waiting time and amount of massages in locking systems (Yun, Abstract).

As per Claim 5, Amiri fails to disclose each of said lock requests includes an

indication of whether or not the corresponding one of the plurality of requesters will

accept said protected data from the lock manager.

Yun discloses each of said lock requests includes an indication of whether or not

the corresponding one of the plurality of requesters will accept said protected data from

the lock manager (i.e. *"Acquirer sends a lock request with information of expected pages to be used

inside a critical section."* The preceding text excerpt clearly indicates that the request includes an

indication of what pages of the protected data will be needed by the requesting process. This will indicate

whether the process will accept the current pages of the protected data from the lock manager.) (Page

529, Paragraph 2).

It would have been obvious to one skilled in the art at the time of Applicants

invention to modify the teachings of Amiri with the teachings of Yun to include an

indication of whether or not the corresponding one of the plurality of requesters will

accept said protected data from the lock manager with the motivation of reducing the

average waiting time and amount of massages in locking systems (Yun, Abstract).

As per Claims 6, 8, and 10, Yun discloses a method performed by a lock

manager, computer readable medium, and lock manager controlling access to protected

data maintained in native storage independent of the lock manager (i.e. *"Under this scheme,*

*a centralized lock server provides locking on low-level storage block ranges. A BST executing at a host acquires an exclusive (for a **devwrite**) or a shared (for a **devread**) lock on a set of target ranges by sending a single lock message to the lock server."* The preceding text excerpt clearly indicates that the lock manager (e.g. lock server) controls access to data in native storage at local hosts.) (Page 6, Column 1, Paragraph 3), wherein the lock manager does not access said protected data from said native storage (i.e. *"Under this scheme, a centralized lock server provides locking on low-level storage block ranges. A BST executing at a host acquires an exclusive (for a **devwrite**) or a shared (for a **devread**) lock on a set of target ranges by sending a single lock message to the lock server. The lock server queues a hosts request if there is an existing lock on any part of the requested range."* The preceding text excerpt clearly indicates that the lock manager does not access the protected data on a lock grant, but merely acknowledges and either grants or queues the request.) (Page 6, Column 1, Paragraph 3), the method comprising: receiving a release of a lock for use in controlling access to said protected data (i.e. *" Under this scheme, a centralized lock server provides locking on low-level storage block ranges. A BST executing at a host acquires an exclusive (for a **devwrite**) or a shared (for a **devread**) lock on a set of target ranges by sending a single lock message to the lock server. The lock server queues a hosts request if there is an existing lock on any part of the requested range."* The preceding text excerpt clearly indicates that the lock manager/server receives a plurality of lock requests from the plurality of requestors.) (Page 6, Column 1, Paragraph 3); identifying a next requester to be granted the lock in response to said receiving the release of the lock (i.e. *" Under this scheme, a centralized lock server provides locking on low-level storage block ranges. A BST executing at a host acquires an exclusive (for a **devwrite**) or a shared (for a **devread**) lock on a set of target ranges by sending a single lock message to the lock server. The lock server queues a hosts request if there is an existing lock on any part of the requested range. Once conflicting locks have been released, the server grants the request."* The preceding text excerpt clearly indicates that locks are selectively granted based on availability (e.g. if a lock is busy upon receipt of a request a next requestor is

identified) and lock grant messages are sent to the requestors.) (Page 6, Column 1, Paragraph 3); and

sending the grant message to the next requester (i.e. *"Under this scheme, a centralized lock*

server provides locking on low-level storage block ranges. A BST executing at a host acquires an

*exclusive (for a **devwrite**) or a shared (for a **devread**) lock on a set of target ranges by sending a single*

lock message to the lock server. The lock server queues a hosts request if there is an existing lock on

any part of the requested range. Once conflicting locks have been released, the server grants the

request." The preceding text excerpt clearly indicates that locks are selectively granted based on

availability and lock grant messages are sent to the requestors.) (Page 6, Column 1, Paragraph 3).

Amiri fails to disclose that the protected data is included in the release and grant

messages and that the protected data is copied from the release to the grant message.

Yun discloses that the protected data is included in the release and grant

messages and that the protected data is copied from the release to the grant message

(i.e. *"Releaser of that lock decides pages to send diffs based on the information from the lock request. To*

minimize the effect of diff accumulation problem [8], selection is based on the size of diffs to be sent for a

page. If it exceeds a page size, diffs for that page are not sent. Diffs of selected pages are sent with write

notices as a lock grant message." The preceding text excerpt clearly indicates that the protected data

(e.g. diffs) are included with the lock grant message. Note as the lock server does not have access to the

local files, the first communicated grant for a specific range of protected data would not include the

protected data due to the lock manager/server not being able to access it. Note that in order for the

protected data/diffs to move from the release to the grant message, it must be copied there.) (Page 529,

Paragraph 3).

It would have been obvious to one skilled in the art at the time of Applicants

invention to modify the teachings of Amiri with the teachings of Yun to include the

protected data is included in the release and grant messages and that the protected

data is copied from the release to the grant message with the motivation of reducing the

average waiting time and amount of massages in locking systems (Yun, Abstract).

As per Claims 7, 9, and 11, Amiri fails to disclose the grant message includes an indication of that said protected data is requested to be sent to the lock manager in a release message corresponding to the grant message if another requester is waiting for the lock, else an indication that said protected data is not requested to be sent to the lock manager in the release message.

Yun discloses the grant message includes an indication of that said protected data is requested to be sent to the lock manager in a release message corresponding to the grant message if another requester is waiting for the lock, else an indication that said protected data is not requested to be sent to the lock manager in the release message (i.e. The Figure 2 indicates that if another process is requesting the lock, the protected data is sent with the release and grant messages, but if no other process is requesting the lock then the data is stored (e.g. not sent to the lock manager). In order to produce this behavior, an indication of whether or not to transmit the protected data back to the lock manager must be present.) (Figure 2).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Amiri with the teachings of Yun to include the grant message includes an indication of that said protected data is requested to be sent to the lock manager in a release message corresponding to the grant message if another requester is waiting for the lock, else an indication that said protected data is not requested to be sent to the lock manager in the release message with the motivation of reducing the average waiting time and amount of massages in locking systems (Yun, Abstract).

As per Claims 12, 17, and 22, Yun discloses a method performed by a lock

manager, computer readable medium, and lock manager controlling access to protected

data maintained in native storage independent of the lock manager (i.e. *"Under this scheme,*

a centralized lock server provides locking on low-level storage block ranges. A BST executing at a host

*acquires an exclusive (for a **devwrite**) or a shared (for a **devread**) lock on a set of target ranges by*

sending a single lock message to the lock server." The preceding text excerpt clearly indicates that the

lock manager (e.g. lock server) controls access to data in native storage at local hosts.) (Page 6, Column

1, Paragraph 3), wherein the lock manager does not access said protected data from said

native storage (i.e. *"Under this scheme, a centralized lock server provides locking on low-level storage*

*block ranges. A BST executing at a host acquires an exclusive (for a **devwrite**) or a shared (for a*

***devread**) lock on a set of target ranges by sending a single lock message to the lock server. The lock*

server queues a hosts request if there is an existing lock on any part of the requested range." The

preceding text excerpt clearly indicates that the lock manager does not access the protected data on a

lock grant, but merely acknowledges and either grants or queues the request.) (Page 6, Column 1,

Paragraph 3), the method comprising: receiving locking requests for a lock controlling

access to said protected data from a first requester and a second requester (i.e. *" Under*

this scheme, a centralized lock server provides locking on low-level storage block ranges. A BST

*executing at a host acquires an exclusive (for a **devwrite**) or a shared (for a **devread**) lock on a set of*

target ranges by sending a single lock message to the lock server. The lock server queues a hosts

request if there is an existing lock on any part of the requested range. Once conflicting locks have been

released, the server grants the request." The preceding text excerpt clearly indicates that requests for the

locks are received by multiple requesters (e.g. a first and second requester).) (Page 6, Column 1,

Paragraph 3); sending a first grant message to the first requester, the first grant message

not including said protected data (i.e. *" Under this scheme, a centralized lock server provides*

locking on low-level storage block ranges. A BST executing at a host acquires an exclusive (for a

devwrite *) or a shared (for a* ***devread*** *) lock on a set of target ranges by sending a single lock message to*

the lock server. The lock server queues a hosts request if there is an existing lock on any part of the

requested range. Once conflicting locks have been released, the server grants the request." The

preceding text excerpt clearly indicates that locks are selectively granted based on availability and lock

grant messages are sent to the requestors. Note as the lock server does not have access to the local

files, the first communicated grant for a specific range of protected data would not include the protected

data due to the lock manager/server not being able to access it.) (Page 6, Column 1, Paragraph 3) and

receiving a first release message corresponding to the first grant message for the lock

from the first requester (i.e. *"When all I/O requests in the BST complete, the host sends an unlock*

message to the lock server." The preceding text excerpt clearly indicates that lock release (e.g. unlock)

messages are received from the lock holders which correspond to the lock grant messages.) (Page 6,

Column 1, Paragraph 3).

Amiri fails to disclose in response to identifying one or more requesters is waiting

for the lock after the first requester, including an indication to return said protected data

in the first grant message and the first release message including said protected data.

Yun Discloses disclose in response to identifying one or more requesters is

waiting for the lock after the first requester, including an indication to return said

protected data in the first grant message (i.e. *"Releaser of that lock decides pages to send diffs*

based on the information from the lock request. To minimize the effect of diff accumulation problem [8],

selection is based on the size of diffs to be sent for a page. If it exceeds a page size, diffs for that page

are not sent. Diffs of selected pages are sent with write notices as a lock grant message." The preceding

text excerpt clearly indicates that if the lock request information is received, indicating another process is

requesting the lock, that the protected data (e.g. diffs) will be returned. This indicates that an indication to

return the protected data was also transmitted.) (Page 529, Paragraph 3) and the first release

message including said protected data (i.e. *"Releaser of that lock decides pages to send diffs based on the information from the lock request. To minimize the effect of diff accumulation problem [8], selection is based on the size of diffs to be sent for a page. If it exceeds a page size, diffs for that page are not sent. Diffs of selected pages are sent with write notices as a lock grant message."* The preceding text excerpt clearly indicates that the release message includes the protected data (e.g. diffs).) (Page 529, Paragraph 3).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Amiri with the teachings of Yun to include in response to identifying one or more requesters is waiting for the lock after the first requester, including an indication to return said protected data in the first grant message and the first release message including said protected data with the motivation of reducing the average waiting time and amount of massages in locking systems (Yun, Abstract).

As per Claims 13, 18, and 23, Amiri fails to disclose sending a second grant message to the second requester, the second grant message including said protected data, and an indication of whether or not to send said protected data in a second release message.

Yun discloses sending a second grant message to the second requester, the second grant message including said protected data (i.e. *"Releaser of that lock decides pages to send diffs based on the information from the lock request. To minimize the effect of diff accumulation problem [8], selection is based on the size of diffs to be sent for a page. If it exceeds a page size, diffs for that page are not sent. Diffs of selected pages are sent with write notices as a lock grant message."* The preceding text excerpt clearly indicates that the protected data is sent in the second grant message.)

(Page 529, Paragraph 3), and an indication of whether or not to send said protected data in a second release message (i.e. *"Acquirer sends a lock request with information of expected pages to be used inside a critical section...Releaser sends diffs for expected pages to be used by acquirer."* The preceding text excerpt clearly indicates that an indication of the next requestor, if one exists, is sent. This acts as an indication to send the protected data along with the release message.) (Page 529, Paragraph 2; Page 528, Column 2, Paragraph 3).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Amiri with the teachings of Yun to include the grant message includes sending a second grant message to the second requester, the second grant message including said protected data, and an indication of whether or not to send said protected data in a second release message with the motivation of reducing the average waiting time and amount of massages in locking systems (Yun, Abstract).

As per Claims 14, 19, and 24, Amiri fails to disclose the second grant message includes an indication to send said protected data in the second release message in response to identifying another requestor is waiting for access to the lock.

Yun discloses the second grant message includes an indication to send said protected data in the second release message in response to identifying another requestor is waiting for access to the lock (i.e. *"Acquirer sends a lock request with information of expected pages to be used inside a critical section...Releaser sends diffs for expected pages to be used by acquirer."* The preceding text excerpt along with Figure 2 clearly indicates that if another process is waiting for access to the lock, it is indicated in the grant message, and the protected data (e.g. diffs) are

sent with the release message. This behavior necessitates that an indication must be made to of whether or not to send the protected data back in the release message based on the number of requestors waiting for the lock.) (Figure 2; Page 529, Paragraph 2; Page 528, Column 2, Paragraph 3).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Amiri with the teachings of Yun to include the second grant message includes an indication to send said protected data in the second release message in response to identifying another requestor is waiting for access to the lock with the motivation of reducing the average waiting time and amount of massages in locking systems (Yun, Abstract).

As per Claims 15, 20, and 25, Amiri fails to disclose the second grant message includes an indication not to send said protected data in the second release message in response to identifying another requestor is not waiting for access to the lock.

Yun discloses the second grant message includes an indication not to send said protected data in the second release message in response to identifying another requestor is not waiting for access to the lock (i.e. *"Acquirer sends a lock request with information of expected pages to be used inside a critical section...Releaser sends diffs for expected pages to be used by acquirer."* The preceding text excerpt along with Figure 2 clearly indicates that if another process is not waiting for the lock, another lock request will not be present in the grant message, and the protected data will be stored instead of sent with the release message. This behavior necessitates that an indication must be made to of whether or not to send the protected data back in the release message based on the number of requestors waiting for the lock.) (Figure 2; Page 529, Paragraph 2; Page 528, Column 2, Paragraph 3).

It would have been obvious to one skilled in the art at the time of Applicants invention to modify the teachings of Amiri with the teachings of Yun to include the second grant message includes an indication not to send said protected data in the second release message in response to identifying another requestor is not waiting for access to the lock with the motivation of reducing the average waiting time and amount of massages in locking systems (Yun, Abstract).

As per Claims 16, 21, and 26, Amiri fail to disclose the second grant message includes an indication not to send said protected data in the second release message; and the method comprises in response to said indication not to send said protected data in the second release message, the second requester storing said protected data and not including said protected data in the second release message.

Yun discloses the second grant message includes an indication not to send said protected data in the second release message (i.e. *"Acquirer sends a lock request with information of expected pages to be used inside a critical section...Releaser sends diffs for expected pages to be used by acquirer."* The preceding text excerpt along with Figure 2 clearly indicates that if another process is not waiting for the lock, the protected data will not be present in the grant message. This behavior necessitates that an indication must be made to of whether or not to send the protected data back in the release message.) (Figure 2; Page 529, Paragraph 2; Page 528, Column 2, Paragraph 3); and the method comprises in response to said indication not to send said protected data in the second release message, the second requester storing said protected data and not including said protected data in the second release message (i.e. Figure 2 clearly indicates that if no other process is requesting the lock on the protected data, the protected data is stored,

and it is not included in the release message. This behavior necessitates that an indication must be made

to of whether or not to send the protected data back in the release message based on the number of

requestors waiting for the lock.) (Figure 2).

It would have been obvious to one skilled in the art at the time of Applicants

invention to modify the teachings of Amiri with the teachings of Yun to include the

second grant message includes an indication not to send said protected data in the

second release message; and the method comprises in response to said indication not

to send said protected data in the second release message, the second requester

storing said protected data and not including said protected data in the second release

message with the motivation of reducing the average waiting time and amount of

massages in locking systems (Yun, Abstract).

3.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Points of Contact

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Hicks whose telephone number is (571) 272-2670. The examiner can normally be reached on Monday - Friday 10:00a - 7:00p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on (571) 272-4146. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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